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The capability approach and school food education and culture in England: 'gingerbread men ain't gonna get me very far'

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ABSTRACT

This study examines the role of school food education and school food culture in England and their potential to support pupils' capabilities to adopt health protecting and promoting behaviours. Drawing on Amartya Sen's capability approach, and Susan Michie's COM-B model, the research was conducted for the *Food Education Learning Landscape* project. Methods included national surveys of food teachers (N = 1503), senior school leaders and class teachers (N = 684), parents and carers (N = 573) and a mixed methods study of pupils in primary and secondary schools (N = 240). Findings indicate that adequate curriculum time, teaching facilities, budget, class size, subject status and teacher training are key factors for successful curriculum implementation. Monitoring and evaluation of school food provision and development of wider health supporting school food practices were found to be critical in supporting pupils' health capabilities. The research insights can inform future policies and practices to support children's potential to lead healthy, flourishing lives.

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Capability approach; school food education; school food culture; children's agency; children's rights; children's well-being

Introduction

Policy makers and practitioners have articulated a growing moral imperative, in light of high levels of childhood obesity in England, urging action to protect children's health (Dimbleby & Vincent, 2013; Rose, Lake, Ellis, & Brown, 2019). A social justice impetus has been expressed due to the social gradient in health outcomes as a whole, with individuals from lower socioeconomic groups being more likely to be adversely affected by malnutrition as well as obesity (Marmot, Allen, Boyce, Goldblat, & Morrison, 2020; Marmot et al., 2010). By contrast, critics argue that taking a moral stance on what constitutes a healthy diet or healthy foods is thinly veiled social control and surveillance. Thus, the subject is complex and policy and practice seen at times as controversial. In light of dominant concerns related to child health and social inequalities, our research adopted a critical capability approach to understand current efforts in England to improve school food practices, cooking and nutrition education, and ultimately child health.

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The research context

On a long-term basis, in parallel with health concerns, successive governments in England, and further afield, have been concerned with the rising costs of treating obesity-related illness in both children and adults (Marmot et al., 2020). For example, Harvey et al. reported that 'obese employees take significantly more short- and long-term sickness absence than workers of a healthy weight' (2010, p. 362). Significant economic costs related to loss or reduced productivity due to illness in overweight and obese adults have been identified.

In terms of a more immediate rationale for improving children's nutrition, researchers have reported evidence that there are beneficial effects of eating healthy school food in terms of both behaviour (Storey et al., 2011) and academic attainment (Faught, Gleddie, Storey, Davison, & Veugelers, 2017). In Canada, Florence, Asbridge, and Veuglers (2008) undertook a study of over 5000 (primary) grade 5 pupils to examine the effect of diet quality on academic performance. They found a positive association between pupils' overall diet quality and their educational achievement and concluded: 'This research supports the broader implementation and investment in effective school nutrition programs that have the potential to improve student access to healthy food choices, diet quality, academic performance, and, over the long term, health' (p. 209). Similar studies have been undertaken elsewhere (Anderson, Gallagher, & Ramirez Ritchie, 2017) and specifically in terms of breakfast, Adolphus et al. (2013, p. 25) found, in a meta-analysis of research on breakfast and academic performance, that, 'overall, the evidence suggests beneficial effects of breakfast for on-task behaviour in the classroom'. By contrast, in relation to negative effects of food consumption, a number of studies have examined the relationship between consumption of fast food and academic achievement. For example, Purtell and Gershoff (2015) reported lower levels of pupil achievement in reading, mathematics and science correlated with frequency of fast food consumption and Li and O'Connell (2012) found similar results with regard to mathematics and reading scores. We found it challenging to define the concept of 'healthy food choices', since different interpretations and measures are found in the existing literature. We used the School Food Standards for England (Department for Education, 2015) and the refreshed Eatwell Guide (Public Health England, 2016) to inform our conception of 'healthy food choices'. Our research methods identified single item purchases during school lunch, such as only chips and other items high in salt, fat or sugar, as less healthy food choices in line with earlier work (Nelson, 2011). Our surveys and participatory research with pupils specifically identified 'chocolate, crisps, sweets, cakes, doughnuts, biscuits, cookies, sugary drinks, ice cream and lollies' as less healthy school food and drink options.

There is a small but significant body of research that frames food consumption by children in contrasting ways, for example in relation to identity, culture and non-health and economic rationale. For example, Elliott and Hore (2016, pp. 190–1) critique prevalent government and public discourses in which 'food is constructed … as both the cause of and the solution to so many social ills' where 'class and wealth differences' can be overcome 'via proper cutlery and sitting around a table with good conversation'. Leahy and Wright (2016) argue the complexities of human relations to food are often overlooked in instrumentalist approaches to combat the obesity epidemic. They argue: 'The aesthetic, material, social, political and cultural complexities are removed and,

within this biopedagogical mix, other ways of thinking about food, bodies and lives are subjugated' (p. 244). Hence in our research we sought to understand dominant cultural characteristics of food habits in school.

The policy context

Since the early twentieth century a series of legislation, national policies and government guidance has been introduced in England to call on schools to support child health in relation to food and nutrition. In the early 1900s malnutrition and hygiene were the key issues identified by Fitzroy, Fox, Legge, Lindsell, Onslow, Struthers, & Tatham (1904), with around a third of children estimated to be malnourished. These concerns led to the Education (Provision of Meals) Act (1906) which called on schools to offer free meals to those in need, wartime provision for universal free school meals and later the School Milk Act (1946), which made provision for free milk (a third of a pint a day) in schools for all children under the age of 18.[1] In contrast, Rose et al. (2019, p. 285) observe that the 1980 Education Act led to a change in school food provision with 'the end of the nutritional guidelines for school meals' and snack food and 'single-item purchases' becoming available. Contemporary government concern has turned to address what has become commonly termed the 'childhood obesity epidemic' with the focus largely on reducing and preventing childhood overweight and obesity. Indeed, the government *Childhood Obesity: A Plan for Action* (2016) reported that, in England overall, nearly a third of children aged 2 to 15 are overweight or obese.[2]

Here we focus on school-related action, acknowledging that school is just one space for policy responses, and one part of children's everyday lives. Multiple policies have attempted to govern and guide the provision of food and drink in schools and the curricula related to food preparation and nutrition. Long (2019) and Evans and Harper (2009), for example, give overviews of changes in School Food Standards since their introduction in the 1940s. Long also reports changes to school meal funding including the introduction of Universal Infant Free School Meals in 2014 and changes to eligibility for means-tested free school meals resulting from changes in the welfare benefits system in England. Regarding education related to food,

> teaching about food, cooking and nutrition has a history stretching back to the nineteenth century in England. Originally aimed mainly at girls and focused on domestic cooking, it was not until the introduction of the 1990 National Curriculum that food technology was introduced for boys and girls with a focus on food processes and related technology alongside cooking skills (Jamie Oliver Food Foundation, Page, & Hart, 2017, p. 16).

The most recent curriculum diet and nutrition related changes include the introduction of Cooking and Nutrition in the National Curriculum in England (2014) and (since completion of our research) new National Curriculum guidance on Health Education (2019).

Our research took place in 2017, following a five-year succession of new nationwide school food-related policy. The School Food Plan (Dimbleby & Vincent, 2013) called for wider efforts across England to promote a whole school food culture, recognising that neither balanced school meals nor food education alone were sufficient to enable children to live well and eat healthily. Although the School Food Plan did not contain a concrete definition of school food culture, we interpret it to be a product of a school's physical and

social food environment, including food provision, food policies and practices (including extra-curricular activities), alongside the formal learning provided through the curriculum. There is a growing body of research indicating the importance of whole school culture in influencing individual and collective food knowledge, skills, dispositions and behaviours. In a cross-national comparison of studies evaluating the impact of school meals as a means of improving the healthiness and sustainability of children's food consumption Oostindjer et al. (2017) highlight the importance of the mix of education, food environment and social interactions as well as micro and macro environmental factors in shaping children's food behaviours. Sahota et al. found that 'the dining environment emerged as a significant factor in shaping all pupils' experiences of, and attitudes towards, school dining' (2013, p. 1277). Hart (2014, 2016a) identified barriers to pupils being able to make healthy food choices, including the absence of school policies on food and drink brought into school; lack of guidance in food selection and consumption during school lunch service; rushed lunchtimes; pupil financial hardship and unhealthy foods on offer in school, either as part of the lunchtime menu or as snacks, celebration, fund-raising items or rewards. Indeed, on the latter point, Fedewa and Davis (2015) report that using food as a pupil reward, 'results in an increased risk of binge eating and other types of eating disorders' (p. 650). We were therefore interested to include the investigation of the use of food for celebration, fund-raising and reward within this study.

In 2014, new National Curriculum guidelines for Cooking and Nutrition were introduced to state primary and secondary schools across the country. They apply to Key Stage 1–3 (pupils aged 5–14 years), aiming to educate pupils to be able to: make healthy food choices in the short and long term; to independently prepare balanced meals; and to offer a foundation for pursuing further studies and work opportunities in food, hospitality and catering. The following year revised School Food Standards were introduced (2015) and another year later the government's Childhood Obesity: A Plan for Action (2016) was published, setting out the government's intention that

> from September 2017, we will introduce a new voluntary healthy rating scheme for primary schools to recognise and encourage their contribution to preventing obesity by helping children to eat better and move more. This scheme will be taken into account during Ofsted inspections (p. 8).

The government guidelines for the 'healthy rating scheme for schools' proposed in 2016 were finally introduced in July 2019.[3] It is currently a voluntary scheme available for primary and secondary schools, in which they agree to participate in the 'Active Lives Survey'.[4] The awards of bronze, silver and gold levels in the healthy rating scheme are dependent on fulfilling criteria linked to nutrition and food in terms of delivery of food education and adherence to School Food Standards (and to physical activity in terms of time spent on physical education and active travel). There is no mention of the national curriculum, but rather school self-assessment of whether 'healthy eating is a curriculum priority' (p. 9).

At the time of our research fieldwork in 2017, the Ofsted school inspection framework required inspectors to evaluate 'the extent to which the provision is successfully promoting and supporting children's and other learners' knowledge of how to keep themselves healthy, both emotionally and physically, including through exercising and healthy eating' (Ofsted, 2015, p. 14). Since that time the Ofsted inspection framework has been

revised and, since September 2019, the diluted framework only requires inspectors to evaluate 'the extent to which the curriculum and the provider's wider work support learners to . . . know how to keep physically and mentally healthy' (p. 11). The emphasis is on evidence of knowledge not behaviour, and food preparation and healthy eating are not specified. Our judgement is that monitoring and evaluation of school food policies and practices has been weak to date and lacked specificity. Indeed, definitions of success criteria and understanding features of good practice have been largely absent. This research aims to address these lacunae.

Methodological approach

The study draws on the work of Amartya Sen (1992, 1999) and Martha Nussbaum (2010, 2011), key proponents of the capability approach. It embraces the concept of capability in operationalising the comprehensive roles of schools in supporting children's opportunities to live healthy lives, particularly in relation to food consumption and food education. Sen describes 'capability' as a person's real freedom to live in a way they have reason to value (1999). In this research context, this extends beyond simply having knowledge and skills about how to eat well. We argue that whether or not an individual is able to apply their knowledge and skills to achieve a balanced dietary intake will depend on wider social and environmental factors. Martha Nussbaum (2000, p. 84) distinguishes between 'internal capabilities' and 'combined capabilities', arguing that an individual may have the internal capability (knowledge, skills, disposition) to live in a particular way, but unless they also have 'external conditions' in terms of social, political, economic and physical environments that support the realisation of their internal capabilities, then the latter may not be enacted. Together, Nussbaum argues that internal capabilities and external conditions come together to form 'combined capabilities' and that 'all should get above a certain threshold of combined capability' (2011, p. 24). Key advantages of drawing on the capability approach for this research are that while individual agency and freedom are centrally positioned, a spotlight is shone on the role of external factors in enhancing a person's capability to be healthy (" Venkatapuram, 2011).

If we examine an individual's (combined) capability in more detail we can see that at any one time an individual is likely to have more than one combination of options in terms of the life they live. Sen describes the range of real freedoms a person has at a point in time as a person's 'capability set'. From this set the individual has to choose a sub-set to convert into ways of living (functionings), since some will be mutually exclusive. We found that understanding how an individual chooses one sub-set over another, and evolves their choices over time, benefits from a psycho-social approach. Michie, West, Campbell, Brown, and Gainforth (2014) reviewed a range of behaviour change models and proposed that a combination of individual capability (physical and psychological), opportunity (physical and social) and motivation (automatic and reflective) lead to behaviour change. Michie et al.'s work chimes well with the capability approach and both informed our study throughout the research process from methodology, to the framing of our research questions and participatory activities with children. Through this combined lens we acknowledge that there may be motivational or practical factors that influence choice. For example, a child may understand the elements of a nutritionally balanced meal and be motivated to select this option when

offered choice. However, if their peer group values unhealthy food practices then the individual may bow to social pressure and go along with them. Here the individual pursues the capability for affiliation, friendship and peer recognition over the capability for health. We therefore focused our research not only on the knowledge and skills that pupils acquire through their school education, but also on their dispositions and motivations, together with wider school resources and environmental conditions. We explore how these elements help and hinder the conversion of pupils' internal health capabilities into functionings.

Research methods

Our research focused on the twin aims of understanding firstly the way that food education in primary and secondary schools in England[5] is conducted in the formal curriculum in relation to building children's internal health capabilities. Secondly, we examine the way that schools' food policies, cultures and environments influence pupils' opportunities, to put their learning into action. We built on Hart's (2014) pupil capability framework to develop the research methods and to understand pupil nutrition capability in terms of four elements. Hart's elements include: resources; individual knowledge, skills and dispositions; the social context; and the environmental context. In relation to eating habits in school, for example, these elements may relate respectively to catering facilities; individual food knowledge, skills and dispositions; school culture; and the physical, social and policy environment.

The research was undertaken from December 2016 to July 2017, in partnership with the Jamie Oliver Food Foundation, the British Nutrition Foundation and the Food Teachers' Centre. Although the initial project idea was developed at the funding application stage, the research followed an organic co-production strategy in the sense that practitioners and academics worked together to define how different aspects of the project could best be researched. Our approach was informed by Buick, Blackman, O'Flynn, O'Donnell, and West (2015), who set out recommendations to achieve co-productive work establishing a common purpose and goals, team-building and good communication, support and adequate time to develop shared thinking. In light of potential for 'power differentials between academics and community partners' (Hart et al., 2013, p. 278), we sought to minimise these as far as possible by valuing diverse knowledges and establishing spaces for individuals to exercise agency and voice in contributing to the architecture of the Food Education Learning Landscapes project. At the heart of the process were three working groups on Curriculum, Whole School Approach and Behaviour Change that a wide range of stakeholders from the public, charitable, corporate and government sectors were invited to join.[6] Multiple co-located working group meetings were held, with plenary opportunities to share with the other groups, building trust and rapport. The ideas generated within these groups were synthesised and further developed by the research steering group aiming to retain the authenticity of contributions from the breadth of community partners, alongside balancing the need to develop a robust research methodology.

It was challenging to achieve equitably co-produced work with many contributors, within a limited timeframe and budget, but we do see this project as contributing to ways of understanding that build recognition of different types and forms of knowledge

beyond the academy, in partnership with community stakeholders and support Bell and Pahl's assertion that 'we should fight for academia as a space in which [to] co-produce' (Bell & Pahl, 2018, p. 114). This collaborative community effort has been recognised in part through the primary dissemination of the research largely through public facing reports, blogs, policy briefings for government departments, behind-the-scenes briefings informing television programmes,[7] policy consultations, and dissemination events with community stakeholders.

The fieldwork consisted of three online surveys of school leaders, food teachers and parents, as well as participatory research with pupils in primary and secondary schools. Specifically, primary and secondary school senior leaders and class teachers took part in an online survey (N = 684),[8] with sampling designed to ensure respondents were representative of the Department for Education database of schools in terms of school type, school size and percentage of pupils receiving Pupil Premium. There were 1503 respondents to the food teachers' survey, including 1165 secondary teachers (around a quarter of all secondary school food teachers in publicly funded schools in England). A nationally representative survey of parents and carers of children under 18 was also conducted (N = 573). Fieldwork was conducted with 240 pupils in primary and secondary schools.[9] Here we discuss the pupil research in more detail with individual data and reports on the surveys available elsewhere.[10]

In order to operationalise food education in schools we used the proxy of delivery of the new National Curriculum for Cooking and Nutrition (2014). This does not necessarily capture all school education related to food, nutrition and cooking skills, so we mitigated this limitation by researching children's whole school food experiences through participatory methods with pupils. In recognition of children's agency, and because the research team wished the experience to be empowering for the participants, the research was designed to be conducted 'with children' rather than 'on children' (Kellett, 2010, p. 88). Adopting an interpretive perspective that perceives the social construction of lived experiences, it was important to work with children in person to understand their experiences of food teaching and learning, school food culture and the school food environment, as well as to explore how the interaction of these factors shapes their knowledge, skills, dispositions and behaviours.

Ethical practices related specifically to working face to face with children drew on Alderson and Morrow (2011) and Farrell (2005).[11] We adopted a participatory approach to the research with pupils. For example, children worked in small groups to draw pictures, create school maps and to write about and discuss the things in their school that they felt made it easier or harder to make healthy eating choices. Pupils also participated in group discussions regarding learning across the three core areas of the NCC Cooking and Nutrition curriculum: food provenance; preparation and cooking of dishes; and the principles of a healthy diet.[12] Pupils were invited to take the researchers on 'learning walks' and take photographs of locations around their schools illustrating artefacts, spaces and activities they felt reflected their school food culture. Pupils described and reflected individually and collectively on how these shaped their learning and behaviour. The University of Sheffield granted ethical approval for the participatory research with pupils, which adhered to the British Education Research Association ethical guidelines (BERA, 2011).[13]

Findings and discussion

Internal capabilities: pupil knowledge, skills and dispositions

Curriculum (knowledge and skills: what is taught)

Pupils in all participating schools reported experiencing some form of food, cooking or nutrition education. Overall, formal lessons contributed somewhat to developing knowledge and skills related to healthy eating, more so in secondary than primary schools. Using our Sen-Michie lens to unpack this further led us to consider the role of individual capability in relation to social and environmental factors. The number of lessons varied widely and content tended to cover partial elements of the National Curriculum, with additional elements particular to individual schools. The latter variously supported and contradicted government aspirations to develop healthy eating habits in young people. The quality and range of food education varied within and between primary and secondary schools, with the latter experiencing more opportunities overall. Four out of five food teachers surveyed said they placed a significant emphasis on developing practical skills and health and nutrition knowledge, whilst only around one in four reported a significant emphasis on food origins or strategies related to pupils' food choices. Overall, there was little reported by pupils on the seasonality and provenance of different foods. Moreover, food processes tended to be limited to milk production, despite food provenance and processes being on the new national curriculum.

We found that in primary schools pupils tended to have ad hoc opportunities to engage in food education and that this was often fairly passive for pupils, for example, watching teachers prepare food or making tray bakes and cakes. There was regular emphasis on knowledge about the Eatwell[14] guidance and eating fresh fruit and vegetables with the '5 A Day'[15] campaign being mentioned in most schools. Messages and activities were often repeated across years, with pupils recalling learning about limiting sugar, salt and fat in good food habits. For example, one Year 6 pupil commented, 'sugar can rot your teeth, make you go bouncing off the wall'[16] with another Year 6 pupil stating: 'Salt can give you a heart attack.'

Primary children's food preparation skills seemed to vary significantly, with most reporting having more opportunities to develop skills at home rather than school during the primary years. When asked about opportunities to prepare food, one Year 6 pupil recalled: 'In Year 4 we were given the opportunity to make some cup-cakes for the summer fair. We got to weigh out the ingredients and they chose the best ones to go to the summer fair.' Although clearly some food education had taken place, learning often came across as fairly superficial, with one Year 6 commenting: 'When we did the pizzas it wasn't really like cooking.'

Secondary pupils were able to articulate in more detail what had been covered in their food education and also some of the missing detail that they felt could be beneficial. One pupil commented: 'Well most everyone know they should eat fruit and vegetables and a balanced diet but not maybe what food gives you iron and all the minerals and stuff.' Another commented that: 'They might be aware of eating but not what's in it that they need to eat.' A further pupil remarked: 'And most people don't know what's in food that's not healthy for you like most people don't know that a can of Coke has got like 30 grams of sugar.' When pupils were asked about what might enhance their food education, and in turn their opportunities to eat healthily, one Year

10 pupil commented: 'All what we did was ginger bread men and pizza and it's good but we could do more general food more stuff 'cos when I go to university ginger bread men ain't gonna get me very far.' Another Year 10 pupil suggested: 'Doing a proper meal that you actually can cook when you're older then it's going to be more beneficial that just having an hour to make a cupcake – it's not really a proper meal to have.' Some pupils suggested having 'a whole day learning about food' and learning to make, 'spaghetti Bolognese, something like that something you can eat like if you go to university or for after school, if you're hungry when you come home, something quite simple' and 'sometimes you might want to make a salad or pasta'. One Year 10 pupil reflected: 'This is not necessarily about planning for the future but it's actually about right now, when you've got busy working parents you need that knowledge now.' In terms of learning skills for food preparation we found some secondary pupils reported opportunities to practise a range of techniques such as peeling, chopping (using claw and bridge techniques), using kitchen knives, grating, weighing and using an oven. However, in other schools pupils frequently reported that there were limited opportunities to develop practical cooking skills in their lessons. Some pupils described simply putting pre-chopped or grated ingredients on top of a ready-made pizza base. In one example pupils described their experiences:

Interviewer: What savoury dishes have you made?

Pupil 1: We made pizza, like a whole pizza.

Interviewer: Okay, did you make the dough?

Pupil 1: No, we didn't have time … but we put the cheese on top.

Interviewer: You were given the base?

Pupil 1: We had to bring in the base and we got to pick what we put on top … but we had to layer the sauce, and things like that.

Interviewer : Did you have to make the sauce?

Pupil: No.

…

Pupil 1: We just had to put it together.

Pupil 2: Just lob it all on!

Interviewer: What year was that?

Pupils 1, 2, 3: Year 8, Year 8, Year 7/8 (together).

…

Interviewer: Anything else?

Pupil 3: We made bread.

Interviewer: Okay, what did you put in that then?

Pupil 3: Eggs, flour, yeast and water … but we couldn't let it rise we didn't have time …

Curriculum delivery (knowledge and skills: how it is taught)

Resources were also found to be significant factors in supporting pupils' food education and five resource factors were identified from the data. Budget, time, facilities, equipment and class size were perceived by senior school leaders as significant barriers to delivering high quality food teaching, illustrated in Table 1, with findings broadly similar for the food teachers' survey.

Significantly, only one third (34%, n = 788) of secondary food teachers and a quarter (25%, n = 185) of primary food teachers reported they had enough time to deliver all the knowledge and skills in the cooking and nutrition NC guidelines. Fifty-two per cent of primary teachers reported that pupils in their schools only had opportunities to practise food preparation and cooking skills twice a year or less (n = 201). The impact of time constraints appears to be that teachers become selective about which elements of the curriculum content to omit or shortcut, with opportunities to practise cooking skills likely to be sub-optimal. Table 2 indicates a significant disparity in priority and provision of food education across schools in England.

It was apparent from the food teacher survey that subject status and competition for resources from other departments had a generally negative impact on food education compared to other subjects. Finance and limited budgets were a key resource factor in determining what classrooms and equipment were available for pupils to use, with the general expectation that pupils supplied their own aprons and ingredients for food education lessons: two-thirds of secondary pupils and around half of primary pupils were expected to bring in their own ingredients according to the food teachers' survey. Practical lessons were often reported by

Table 1. Significant challenges to delivering high quality food education as reported by senior school leaders.

Factor	'Fairly significant' or 'very significant' challenge	'Somewhat significant' challenge	'Not really significant' or 'A little bit significant' challenge
Adequate budget	70% (primary)	16% (primary)	15% (primary)
	73% (secondary)	16% (secondary)	11% (secondary)
Adequate time	68% (primary)	20% (primary)	12% (primary)
	67% (secondary)	22% (secondary)	12% (secondary)
Adequate facilities and equipment	61% (primary)	17% (primary)	23% (primary)
	62% (secondary)	18% (secondary)	20% (secondary)
Appropriate class size	44% (primary)	25% (primary)	31% (primary)
	56% (secondary)	17% (secondary)	27% (secondary)

Note: Primary senior leaders n = 241; secondary senior leaders n = 441.

Table 2. Responses to the question, 'In your school, how much time per school year, on average, is spent on food education?' for food teachers and senior leaders (%).

Average hours per academic year	Primary food teachers' responses, Key Stages 1–2 (pupils 5–11 years old), n = 152	Primary senior leaders' responses, n = 235	Secondary food teachers' responses, Key Stage 3 (pupils 11–14 years old), n = 665	Secondary senior leaders' responses, n = 431
10 hours or less	56%	63%	13%	32%
11–20 hours	29%	26%	49%	42%
21–30 hours	7%	8%	26%	15%
More than 30 hours	9%	3%	13%	11%

pupils as crowded, with one Year 7 commenting: 'There is quite a lot of us and we are all crowded around a table.' The standard format for teaching cooking skills in secondary school was to have a demonstration lesson, where pupils watched a teacher prepare a dish, followed by a practical lesson, where pupils worked often in pairs to reproduce the dish. In one focus group a pupil described their experience: 'One of the lessons took up because Miss showed us how to make the sauce and then the lesson after that we just got on with it … .'

It was rare for pupils to have access to growing areas on their school property or at allotments, but a small number of schools did cultivate food. Where this was the case, pupils were generally very enthusiastic about opportunities to cultivate and prepare self-grown food. One primary school had written their own recipe book in which they wrote: 'The garden is a really important part of our school, not only do we have a weekly Gardening Club but it's our outdoor classroom that we all share' (" Oughton, 2017, p. 5) . However, on the whole, no systematic recording, monitoring or evaluation of learning took place. Pupils generally reported that they did not have lasting resources to support their lessons, such as recipe logs or books to record learning on nutrition. Some pupils reported being bored when they repeated recipes similar to ones they had done before. The following Year 10 focus group extract illustrates typical responses on the question of opportunities to record learning in food education:

Interviewer: Do you keep records of what you have been learning at school?

… for food, for like your recipes, would you have written that down somewhere? Would it have been recorded somewhere?

Pupil 1: Yes, but we don't have it any more.

Pupil 2: I've never wrote down a recipe […] I've just brought the ingredients in and got given a sheet with what we are meant to do.

Interviewer: And then what's happened to the sheet after?

Pupil 2: Then we just give it back in.

Interviewer: Okay, and so you don't actually get a copy of it?

Pupils (together): No.

Interviewer: So you go away with the dish?

Pupil 1: Yeah.

Interviewer: But you don't have a record of how it was made?

Pupils (together): No …

In terms of the capability approach, these multiple resource constraints limit the development of pupil knowledge and skills, as well as the consolidation of pupils' internal capabilities. Pupil disposition is another key element of internal capability, and we now turn to examine this.

Pupil dispositions and motivation

Evidence around pupil motivation was linked mainly to opportunities to practise cooking skills, with pupils enjoying being independent, undertaking experiential learning, being able to share recipe ideas with peers and eat the food they had made. One pupil commented, 'When you are doing catering you are moving about, making stuff it's really nice' and another that 'You've got a responsibility as well.' Pupils of all ages generally remembered clearly what they had learnt through hands-on experiences and there is evidence in the literature that experiential learning can support learning outcomes (Dewey, 1997). In some schools, pupils handmade pizza dough and harvested vegetables from their school allotments to prepare as toppings. One Year 7 pupil commented:

> It was like investigating, you was figuring out how to make stuff and what you had to do, and it was kind of like exciting, finding out how to do it and you feel positive because you feel like you can do it again and want to do it again.

Pupils described liking 'the fun of just making it – yeah – getting your hands dirty' and 'experiencing it all', as well as the fact that 'you're allowed to eat it all afterwards'.

There were also motivational factors related to how pupils were feeling at the time of their lessons, and particularly in relation to feelings of hunger and thirst. Secondary pupils in particular mentioned feeling hungry at different points during the school day, especially in the lessons preceding morning break and lunchtime. One Year 7 pupil commented: 'You find it easier to learn when you're not thinking about being hungry or your heads not hurting 'cos your thirsty.'

The lived reality for many pupils, and especially at secondary school, is that the school food and drink choices available (at breakfast, breaks, lunch and so on) frequently fail to adhere to government School Food Standards despite governors having a statutory obligation to implement them. Pupils frequently reported finding it difficult to put their learning into practice. One Year 10 pupil articulated their experience clearly:

> With our school it is like they tell us to eat healthy, but they don't really encourage us. It's like all the food in the canteen it's not really healthy. Where they tell you should have five portions of fruit and veg, you don't really see any fruit and veg.

We now turn to discuss this in relation to opportunities to convert pupils' internal capabilities (knowledge, skills, dispositions) into combined capabilities in terms of social and environmental factors that support eating well and making health-promoting choices.

School food culture (external factors and combined capabilities)

The School Food Plan called for a whole school food culture. Our data indicate that school food culture varies significantly between schools, with a stark contrast between primary and secondary schools. There were several examples of a whole school approach to food in the primary schools visited, but none of the secondary schools had achieved this. Whole school food policies were found to exist in a minority of schools, with only a third (30% n = 192) of primary and a quarter (23% n = 391) of secondary senior leaders reporting their school had one. Table 3 shows variable engagement of senior leadership in developing a whole school food culture, as well as low levels of accountability and monitoring of school food practices.

Table 3. Findings from the food teachers' survey related to whole school food culture.

Survey statement	Agree	Disagree	Unsure
We monitor our compliance with School Food Standards on a regular basis	63% (primary) 32% (secondary)	20% (primary) 44% (secondary)	17% (primary) 24% (secondary)
Our school governing body is actively engaged in supporting and monitoring our school food practices	47% (primary) 24% (secondary)	41% (primary) 56% (secondary)	12% (primary) 20% (secondary)
Our school has a member of the senior leadership team who leads on school food and school food education	47% (primary) 17% (secondary)	43% (primary) 70% (secondary)	10% (primary) 13% (secondary)

Note: Primary n = 216; secondary N = 859.

In secondary schools, food provision as well as practices around reward, celebration and fundraising were frequently found to be contradictory or at best inconsistent with healthy eating messages taught through food education. Only 49% (n = 242) of primary and 40% (n = 440) of secondary leaders surveyed stated that their school environment is often or very often consistent with a positive whole school food ethos. This is in direct contradiction of parents' wishes: the vast majority of parents surveyed (over 94%, n = 573) believe it is 'important' for primary and secondary schools to provide an environment that supports children to have a healthy diet, with over 60% stating they felt it to be 'very important'.

Food provision (what food is on offer)

In primary schools, there were good and outstanding examples of food provision, with high-quality, nutritionally balanced meals. In all of the secondary schools visited, observations and discussions with pupils revealed that school food provision was frequently not health supporting. In a number of the primary schools visited, pupils reported that they were supported by staff to eat a variety of foods, including healthy options: 'If you don't have any cooked vegetables … then you have to have at least two things from the salad' (Year 2 pupil). In one school, pupils said that it was 'easy' to choose healthy options 'because she [the school cook] usually cooks things you like' (Year 2 pupil). A key difference between primary and secondary schools is the freedom for pupils to make single item purchases in secondary schools, effectively promoting a 'pick "n" mix' culture, making it hard to meet recommended dietary guidelines. Secondary pupils described a plethora of unhealthy food options in their canteens: 'when they sell food, most of its quite unhealthy, there's like chocolate buns, chocolate doughnuts, sausage rolls, pasties' (Year 7 pupil). Single purchase items such as these, high in fats, salts and sugars, were commonly offered twice, and sometimes three times, a day in secondary schools.

Secondary pupils were aware that constraints on choice at primary level contrasted with their experience at secondary school:

> I feel like primary school gives you like moderation, like one day they give you cake, and then the next day they give you like fruit, or yoghurt or something … but in senior school it's all there, but now you have to pick what you would like (Year 7 pupil).

Another Year 7 pupil stated: 'In secondary you've got more choice, you've got to be more mature about it, it's your money … it's about like if you want to be healthy or unhealthy.'

Pupils in secondary schools described a dearth of healthy options. Many felt there to be an absence or low level of provision of fruit and vegetables, with one Year 7 pupil saying: 'In school they don't really have fruit and veg.' These perceptions may be partially

shaped by the ways in which foods are displayed. Students reported, and researchers observed, that visual cues in secondary schools were not often health supporting, with prominent displays of unhealthy foods, including 'supersize' cookies and sugary drinks at key locations in the dining hall (on entry and at payment points). There was also a general absence of posters or wall displays promoting healthy choices. Although foods such as salad were provided in some secondary schools, they were harder to locate and access within the canteen, with one pupil reporting:

> As you go in the canteen, there is a huge stand for unhealthy stuff that fills you up, but as you walk in a bit further there is a salad bar, and the salad bar is a quarter of the size.

This has an impact on the foods the pupils choose, as one commented: 'You go past all the unhealthy stuff first, so you spend all your money on the unhealthy stuff and you ain't got enough money for the healthy stuff.' Conversely, pupils experienced multiple cues, often smells, of more unhealthy foods such as pizzas and paninis being prepared in various locations at several points during the school day: 'I was outside and I could smell it, it makes you want to eat more, if you smell a panini, you are just like "oh I want to eat a panini"' (Year 10 pupil). Pupils also described how unhealthy items appeared to be better value for money, for example, comparing a pot of grapes – about which they also had doubts as to its freshness – at 80p, with cake that was perceived as less risky and more satiating at 70p.

So, there emerges a spectrum – from complete pupil freedom to self-regulate food intake, with the risk of health-compromising behaviours, to the imposition of a completely controlled diet to promote physical well-being achievement, but with the risk of curtailing pupils' freedom. Hart and Brando (2018, p. 293) highlight 'the tensions and trade-offs between risks to children's agency and well-being in and through educational processes'. The capability approach helps to recognise this trade-off, whereby a completely laissez-faire approach to children's food choices may cause significant harm to their well-being achievement, but an overly coercive approach might unacceptably curtail a child's agency and freedom of choice. The evidence from this study suggests many schools are positioning pupils with (perceived) freedom to eat healthily and to self-regulate, but providing them with a limited market from which to make food selections, many of which are hostile to healthy eating recommendations. This cocktail of freely available unhealthy food options marketed towards a captive and vulnerable population is a cause for concern.

Food environment (how, where, when food is on offer)

Primary and secondary leaders raised concerns about the lack of time and space available for lunch provision and the impact this had on pupil dining experience and food ethos. All but two secondary leaders interviewed thought that their dining areas were too crowded. Primary pupils did not raise the quality of their dining environments as an issue, whereas pupils in secondary schools spoke negatively about their school dining environments, describing them as 'manic', 'cramped' and 'overwhelming'. One Year 10 pupil said: 'It's packed, it's literally all people pushing and shoving . . . it makes you feel like you are being bullied.' Long queues were also reported to be a problem, often resulting in pupils deciding not to purchase food at all: 'If you get to the canteen and

the queue's out the door, you just forget it. Just go without' (Year 10 pupil). In one focus group, Year 10 pupils described the impact of this on their mood and learning:

Pupil 1: You get 'hangry' (hungry and angry)

Interviewer: Does that happen? What impact do you think that has on you?

Pupil 2: Not concentrating.

Pupil 1: Yeah, in the next period.

Pupil 3: Moaning 'cos you're hungry.

Pupil 2: You're just in a bad mood

Pupil 3: And you take it out on other people.

Interviewer: How often would you say that happens to people here?

Pupil 4: A lot.

Here we can see how environmental factors affect pupils' opportunities to convert knowledge about healthy eating into practice, with some children foregoing eating altogether. In terms of the sensation of feeling bullied expressed, this shows how sometimes the functioning of eating well may come at the expense of other well-being sacrifices. Ultimately environmental factors can enhance or diminish the possibility of pupils' internal capabilities (knowledge, skills and dispositions) being converted into valued ways of living (functionings).

Rewards, celebrations and fundraising (what, where, when, how)

Food teachers and senior leaders surveyed reported that foods high in salt, fat and sugar are routinely offered as part of school fundraising, reward and celebration in primary and secondary schools, with broadly corresponding data across the two surveys (Table 4). This goes against the spirit of the School Food Plan and School Food Standards, as well as contradicts the wishes of parents who were surveyed, over 70% (n = 573) of whom felt that such food and drink should not be offered more than once a term as part of school fundraising, rewards and celebrations.

Fundraising events and their promotion create cues encouraging pupils to buy unhealthy foods, as this Year 10 discussion shows:

Pupil 1: It is [cake sales] advertised around the school, posters and stuff, and that definitely influences you to want to go and buy one.

Interviewer: How often would you see a sign for a cake sale?

Pupil 2: Probably see them all the time.

Pupil 3: They're always up.

Pupil 1: And they're mentioned in assemblies and maybe in your form time.

Pupils described how they felt encouraged to buy unhealthy foods as part of fundraising 'because it's for charity and it's cheaper' (Year 7 pupil). They were aware of the conflict between messages about being healthy and the desire to raise funds for their school:

Table 4. Food teacher and senior leader agreement with statements that buns, cakes and sweet treats are offered as part of school activities.

Biscuits, buns, cakes, sweet treats and other similar items offered as part of school:	Primary teachers, agree items offered, n = 172	Primary school leaders, agree items offered, n = 240	Secondary teachers, agree items offered, n = 732	Secondary school leaders, agree items offered, n = 440
Fundraising	85%	71%	86%	92%
Rewards	26%	24%	53%	49%
Celebrations	58%	61%	68%	74%

> In my old school they did a chocolate tombola … every kid would go three or four times … The school say they want the children to be healthy, but they want the money from that, like there's two sides to it (Year 7 pupil).

There was low reporting amongst primary pupils of foods high in salt, fat and sugar being given as rewards. Pupils in secondary schools, however, gave multiple examples of such rewards, for behaviour, achievement and particularly attendance. In one secondary school, form groups that had achieved full attendance for the month were rewarded with doughnuts. In another, chocolate and sweets were among the prizes awarded to pupils in the house with the best attendance record. This contradicts parents' and carers' wishes: 72% (n = 573) surveyed said foods high in sugar, salt and fat should be given once a term or less, and 45% felt they should never be offered as a reward for attendance.

Discussion and recommendations for practice

We have written this article at a time when further new health education policy is being introduced in schools in England. New government guidance on health education stipulates that from September 2020,

> primary aged pupils should know what constitutes a healthy diet (including understanding calories and other nutritional content); the principles of planning and preparing a range of healthy meals and the characteristics of a poor diet and risks associated with unhealthy eating (including, for example, obesity and tooth decay) and other behaviours (e.g. the impact of alcohol on diet or health) (Department for Education, 2019b, p. 34).

At secondary level under the new guidance

> schools should continue to develop knowledge on topics specified for primary as required and in addition cover how to maintain healthy eating and the links between a poor diet and health risks, including tooth decay and cancer (Department for Education, 2019b, p. 37).

Our critical examination of the implementation of the National Curriculum (2014), and the new health education guidance shows that the curricula are based on knowledge transmission (Department for Education, 2019b). We found the National Curriculum for Cooking and Nutrition has been partially implemented in schools, but that pupils' combined capabilities are limited by a largely knowledge-based curriculum operating under multiple resource constraints and within wider school contexts of constraining social and environmental factors which institutional and national policy fail to adequately address. Pupils in the study reported little or no evidence of opportunities in school to develop or

critically reflect upon their own values, aspirations (not only knowledge and skills) and decision-making skills related to healthy eating. There was little evidence to suggest pupils had educational opportunities that enabled them to explore or develop their motivations and resilience to self-regulate diet in hostile food environments, and especially at school. The development of children's food-related aspirations and opportunities for pupils to critically reflect on and develop their food-related values have yet to be recognised in school food policy and practices. Nurturing children's aspirations is pivotal to behaviour change away from health diminishing practices and towards health protecting and promoting behaviours (Hart, 2012, 2016a, 2016b).

The perceived low subject status of food education, limited budgets, curriculum time, facilities, staff training and a lack of monitoring, evaluation, incentive or sanctions all influence the quality of school food education on offer. Moreover, the lack of a theory of behaviour change to inform curriculum planning limits the efficacy of curriculum delivery and learning impact, particularly regarding the capabilities and dispositions required for pupils to make healthy food choices.

A school's food culture is important as it provides the 'choice architecture', the context that frames individuals' decisions, which has been shown in behavioural psychology experiments to be critical to shaping behaviours (Kahneman, 2011; Thaler & Sunstein, 2009). We found the extent to which the whole school food culture is synergistic with the internal capabilities pupils have developed through their learning has a strong relationship with their combined capabilities to make healthy food choices, and ultimately their food behaviours.

In our study we found that in many schools, particularly secondary, food cultures run in contradiction to pupils' learning instead of reinforcing it. School food practices habitually include unhealthy foods as part of fundraising, during celebrations and as rewards. Secondary pupils also clearly articulated the barriers they face in applying their learning about a healthy diet as they navigate the hostile environments of school food provision. In these schools a mix of social, economic and environmental factors combine to undermine the healthy eating capabilities pupils have developed through their food education. Examples of good practice identified for the School Food Plan demonstrate that a whole school food approach including high quality, healthy food provision is possible in primary and secondary schools.[17] Increased sharing of good practice between senior leaders, as well as caterers, could make this a reality in more schools.

The lack of adherence to the stipulated requirements, and spirit, of School Food Standards (SFS) in secondary schools, may in part be due to the low levels of monitoring of compliance to these standards reported by senior leaders. It may be that the introduction of more robust monitoring procedures would improve provision. The availability of single purchase items high in salt, fat and sugar in secondary schools is currently problematic, as these items are not equivalent to a complete nutritionally balanced meal. Adjustments to the SFS, as well as in-school practices, limiting the availability of such items, and introducing healthy whole meals 'to go' could appeal to the health-seeking and social motivations of pupils.

The development of tailored training for school bursars and government employees with responsibilities for negotiating school catering contracts may help to ensure food offered on school premises is nutritionally balanced and facilitates pupils' healthy food choices. Both the content and presentation of food requires consideration within

contract specifications. For example, this could curtail 'chip only' queues and encourage healthy options to feature more prominently in food displays. Food teachers reported that food education has a low status in schools compared to other subjects. Including a mandatory element on food education, food culture and relevant legislation in initial teacher training and in senior leadership training would potentially help to raise the status of the subject.

The current lack of responsibility and accountability for school food provision and practices, in a milieu of competing priorities for school leaders and governors, does not create an impetus for action. A stronger role for school governing bodies in monitoring and enforcing SFS and broader school food practices with clear leadership and reporting mechanisms, potentially imposing a 'health and wellbeing' statutory duty of care on them, may create this impetus. Opportunity to strengthen the Ofsted inspection framework in England, with a more specific focus about the extent to which school food education, provision and practices are consistent and health promoting, was recently missed in England. In future, however, and indeed in other national contexts, school inspection mechanisms could bring food education and provision into sharper focus.

We conclude that 'healthy eating' as mentioned in the 'healthy rating scheme for schools' (Department for Education, 2019a, p. 9) is not yet a curriculum or cultural priority in many schools in England. We further conclude that focusing on knowledge of 'how to keep physically and mentally healthy' as stated in the revised Ofsted framework (Ofsted, 2019, p. 11) is limited without a supportive school food culture and opportunities to reflect and think critically about food and food choices in an appropriately resourced social, physical and educational environment.

Notes

1. Evans and Harper (2009) offer a good review of School Food Standards in the UK. For further discussion see Dimbleby and Vincent (2013).
2. H.M. Government (2016) *Childhood Obesity: A Plan for Action*.
3. This was following completion of our fieldwork and dissemination of our policy briefing and full research report (Jamie Oliver Food Foundation, et al., 2017) (available at https://drive.google.com/drive/folders/1ZZYt41xOYd216DPhu5hvjeuZRBBs-acW?usp=sharing.)
4. Further details can be found at Sport England via https://www.sportengland.org/research/active-lives-survey/.
5. Department for Education (2013) *Statutory Guidance National Curriculum in England – Design and Technology Programmes of Study* (London, Department for Education), available at www.gov.uk.
6. The full list of working group participants is included in Jamie Oliver Food Foundation, et al. (2017, p. 96).
7. See for example Jamie and Jimmy's Friday Night Feast, first aired 21 December 2018 on Channel 4 (UK).
8. Approximately 70% of the sample had leadership roles in schools, including as head teachers, deputy head teachers, year and subject heads, with the remaining participants being classroom teachers. The sample was drawn from nationally representative *Schoolzone* panel data.
9. Full sampling details are available in the Food Education Learning Landscape report (Jamie Oliver Food Foundation, et al., 2017). Schools were from two local authorities in England with selection criteria including a number of socioeconomic factors to support representativeness.
10. See 'additional information' at https://drive.google.com/drive/folders/1ZZYt41xOYd216DPhu5hvjeuZRBBs-acW?usp=sharing.

11. Further details regarding the sampling and ethical procedures for the research are available the Food Education Learning Landscape report (Jamie Oliver Food Foundation, et al., 2017).
12. These are the strands in the 2014 National Curriculum on Cooking and Nutrition.
13. The BERA Ethical Guidelines for Educational Research, fourth edition (2018) is now available from www.bera.ac.uk.
14. The *Eatwell plate* is used in, for example, National Health Service (NHS) healthy eating resources to show how much of what a person eats overall is recommended to come from each food group.
15. The '5 A Day' campaign to eat more fruit and vegetables was launched in England in 2003 following advice from the World Health Organization (WHO).
16. All quotations from pupils are verbatim with any grammatical errors left uncorrected.
17. See http://whatworkswell.schoolfoodplan.com/ for examples.

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